

SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver ground and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, NO HIGHER. Excessive high voltage may cause X-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check board wiring for pinched wires or wires contacting any high wattage resistors. Check that all control knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.

HIGH VOLTAGE SHUTDOWN TEST

After servicing the high voltage circuits, test the shutdown circuit by momentarily applying an external voltage of 4.0V to pin 50 of IC7250. The receiver should go into shutdown losing sound and raster. To return receiver to normal operation remove the external voltage source and press the power button.

The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by SAMS Technical Publishing as to the quality and suitability of such replacement part. The numbers of the listed parts have been compiled from information furnished to SAMS Technical Publishing by the manufacturers of the specific type of replacement part listed.

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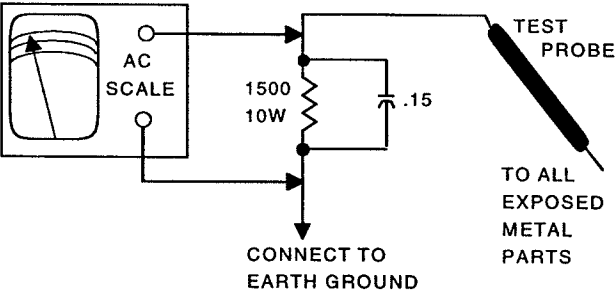
SAFETY CHECKS — FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15µF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.



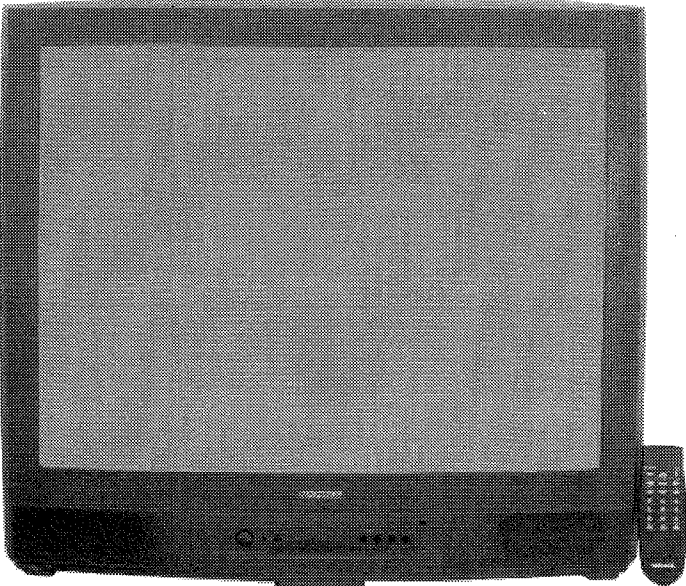
SET 4514

MODELS MS2730, MS2730C221

PHILIPS MAGNAVOX

PHOTOFACT® Technical Service Data

PHILIPS MAGNAVOX
Models MS2730, MS2730C221



Model MS2730C221

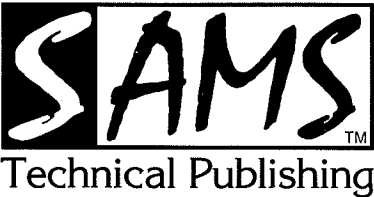
Essential coverage
for servicing a television receiver...

- Schematics
- Component locations
- Parts list

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For Supplier Address,
See PHOTOFACT Annual Index



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01PF01880

0 81262 104514 5

SCHEMATIC COMPONENT LOCATION GUIDE

C2001	A40	C2502	A27	C2915	B6	L5004	B9	R3248	C18	R3510	B27	R3676	B37
C2002	C9	C2504	A26	C2916	B6	L5201	B31	R3249	D19	R3511	C28	R3677	B37
C2003	E32	C2505	A27	C2917	C6	L5202	B12	R3251	D19	R3512	B26	R3680	D38
C2004	C10	C2507	C28	C2918	C6	L5342	B23	R3252	C19	R3513	B26	R3681	D38
C2005	A10	C2508	A28	C2919	D6	L5451	D17	R3253	D20	R3514	C27	R3682	D35
C2006	A11	C2511	C29	C2920	D6	L5457	E15	R3257	B19	R3515	A28	R3683	D35
C2011	A39	C2517	C28	C2921	E6	L5480	D23	R3258	C19	R3516	C27	R3684	A34
C2013	E32	C2518	C28	C2931	D5	L5516	B29	R3259	B19	R3517	C28	R3821	C1
C2102	E3	C2520	C25	C2950	D7	L5518	C29	R3331	B21	R3518	C28	R3822	C1
C2103	E2	C2521	C27	C2952	D6	L5521	C27	R3332	B22	R3520	C25	R3823	C2
C2104	D3	C2522	C27	C2954	D7	L5540	C25	R3333	C21	R3521	C27	R3824	B1
C2201	C11	C2524	C27	C2955	D7	L5551	A31	R3334	C22	R3525	C27	R3825	A2
C2202	B12	C2529	B25	C2956	A6	L5552	C28	R3335	B21	R3528	B26	R3826	B2
C2203	B12	C2530	C26	C2958	A7	L5572	C30	R3336	B22	R3529	B26	R3827	B1
C2204	A13	C2531	C26	C2959	A7	L5573	B30	R3340	D31	R3530	B26	R3828	A1
C2205	C10	C2532	C26	C2960	C32	L5576	A30	R3341	C23	R3532	C26	R3829	B2
C2206	B32	C2533	C25	C2961	D7	L5577	A30	R3342	C23	R3534	C25	R3830	A2
C2207	B32	C2540	B25	C2962	D8	L5600	C35	R3343	C23	R3536	C26	R3831	D1
C2208	B32	C2545	B28	C2963	B8	L5601	E35	R3344	D24	R3537	B25	R3832	D1
C2209	C15	C2550	A30	D6211	D19	L5620	B37	R3345	E24	R3542	A25	R3908	B5
C2211	B13	C2551	A32	D6212	D20	L5821	B31	R3346	E24	R3570	E27	R3909	B5
C2212	C14	C2561	B32	D6213	C19	L5822	D2	R3401	D15	R3571	E26	R3910	B5
C2213	C13	C2562	A30	D6331	B22	LC5500	A26	R3402	D15	R3573	E26	R3911	B5
C2214	C14	C2564	A30	D6333	C22	LD6690	D38	R3403	D15	R3574	D26	R3912	A6
C2215	C14	C2565	A30	D6335	B22	M3505	A26	R3405	D12	R3575	D26	R3913	A6
C2216	C15	C2572	C30	D6401	D13	P1500	A25	R3406	D12	R3577	D25	R3914	B6
C2220	C15	C2573	D26	D6403	D14	Q7254	B31	R3407	E13	R3578	D25	R3915	B6
C2221	C16	C2575	D26	D6449	D11	Q7256	B30	R3408	D13	R3579	E26	R3916	C6
C2222	C16	C2576	D25	D6450	E11	Q7258	D33	R3409	D14	R3585	D26	R3917	C6
C2226	C19	C2577	C32	D6460	E16	Q7263	D20	R3410	D14	R3592	B34	R3918	D6
C2227	D20	C2586	B33	D6463	E19	Q7266	B12	R3411	D14	R3594	B34	R3919	D5
C2247	B18	C2604	C32	D6465	E15	Q7460	E15	R3420	D10	R3595	B33	R3920	D6
C2248	B18	C2609	D35	D6466	E15	Q7461	E13	R3421	D11	R3596	B34	R3921	D5
C2249	B18	C2613	D35	D6481	D19	Q7462	E9	R3422	D11	R3597	B33	R3922	D6
C2330	D32	C2615	D36	D6485	D30	Q7463	E10	R3423	E10	R3598	B33	R3923	E6
C2340	D32	C2616	A37	D6486	E29	Q7481	D20	R3424	D10	R3599	B33	R3924	B5
C2341	C24	C2617	A37	D6487	D29	Q7482	E20	R3425	D10	R3607	B34	R3925	B5
C2343	C23	C2618	A34	D6488	D29	Q7518	C28	R3426	D10	R3607	C36	R3926	D5
C2345	D24	C2619	D39	D6490	E30	Q7590	B25	R3428	D9	R3607	D38	R3929	D5
C2401	E32	C2620	A35	D6505	A27	Q7591	B34	R3429	D11	R3607	E35	R3930	D5
C2402	E32	C2621	A35	D6507	B27	Q7592	B33	R3431	E11	R3607	C36	R3931	D5
C2403	D14	C2622	C32	D6508	B27	Q7603	C30	R3432	E12	R3608	D35	R3950	D7
C2404	D32	C2623	C34	D6511	C29	Q7604	B33	R3433	D34	R3608	D35	R3951	D7
C2405	D12	C2624	C33	D6512	C28	Q7605	D34	R3436	D10	R3608	D37	R3952	D7
C2407	D13	C2625	B39	D6513	C28	Q7608	C34	R3437	D10	R3608	E34	R3953	D8
C2409	D14	C2626	B37	D6540	B25	Q7609	C34	R3438	D10	R3609	A37	R3955	B7
C2420	D10	C2627	B37	D6550	A30	Q7823	D1	R3442	D31	R3609	C34	R3957	D7
C2426	D9	C2628	B37	D6560	B30	Q7904	A5	R3447	D10	R3609	C37	RL1580	A26
C2428	D9	C2629	B37	D6580	C30	Q7908	D5	R3448	E17	R3609	D36	RL1580	B25
C2429	D9	C2630	E35	D6584	B25	R3000	A39	R3449	E17	R3611	D39	SP3100	A8
C2430	B32	C2631	B33	D6585	A34	R3001	A39	R3452	D18	R3612	B34	SP3101	D8
C2431	B31	C2633	B34	D6591	B33	R3010	A11	R3453	D17	R3613	E36	SW1600	D34
C2437	D10	C2679	C35	D6822	D1	R3014	C10	R3454	E16	R3615	C36	SW1601	D34
C2438	C18	C2681	C32	D6951	D7	R3015	C9	R3458	E15	R3618	C38	SW1602	D34
C2440	D11	C2697	D35	D6961	D7	R3016	C10	R3461	E14	R3619	B34	SW1603	D34
C2441	D11	C2821	A1	DG200	A26	R3021	A11	R3462	E14	R3629	D34	SW1606	D35
C2448	E17	C2823	C1	F1500	A25	R3103	E2	R3463	E14	R3630	D35	T5445	C18
C2450	A32	C2824	C1	F1571	C30	R3104	E2	R3464	E9	R3631	E36	T5445	D29
C2451	D17	C2825	C2	F1572	B30	R3108	D2	R3465	E19	R3632	C30	T5461	E14
C2456	E14	C2826	C2	IC7250	A12	R3109	D2	R3466	E9	R3633	C30	T5545	A29
C2457	E15	C2827	C2	IC7250	B10	R3123	C15	R3467	E9	R3634	B34	TH3503	B26
C2458	E15	C2828	C2	IC7250	B15	R3200	A12	R3468	E13	R3635	B33	V1010	C23
C2459	E15	C2829	C2	IC7250	D9	R3201	C10	R3469	E10	R3636	B33	X1001	A11
C2461	E14	C2830	B1	IC7251	B31	R3203	B31	R3478	D19	R3637	E34	X1003	B9
C2462	E14	C2831	B1	IC7330	B21	R3204	B31	R3480	E19	R3651	A37	X1200	B12
C2463	E15	C2832	B1	IC7401	D13	R3205	B11	R3481	D19	R3652	A37	X1208	C15
C2465	E16	C2833	B1	IC7480	D30	R3206	B12	R3482	D19	R3653	B38	X1660	A35
C2469	E20	C2834	B1	IC7520	C26	R3208	B12	R3483	E20	R3654	A38	X1821	B1
C2473	E20	C2835	D2	IC7570	E26	R3209	B30	R3484	D20	R3655	A38	ZD6008	A40
C2481	E19	C2836	D2	IC7581	D25	R3212	B12	R3486	E29	R3657	C31	ZD6113	C15
C2482	D19	C2837	D2	IC7600	B36	R3213	B13	R3487	E29	R3661	A34	ZD6402	D13
C2484	D32	C2838	B3	IC7601	B38	R3215	B30	R3488	D30	R3662	C34	ZD6404	D14
C2485	D31	C2839	B3	IC7680	A33	R3217	C10	R3490	D29	R3663	C33	ZD6464	E10
C2486	E32	C2840	A3	IC7821	A2	R3218	D33	R3491	E30	R3664	C33	ZD6480	D19
C2487	D30	C2841	A3	IC7822	B4	R3219	D34	R3492	E30	R3665	C34	ZD6510	B26
C2488	D30	C2842	D4	IC7951	B7	R3220	C15	R3495	E20	R3666	C34	ZD6514	C27
C2489	E32	C2843	B32	J0223	C15	R3225	C16	R3496	E20	R3667	C33	ZD6601	C30
C2490	E29	C2844	A4	J0223	D2	R3228	C13	R3497	E20	R3672	E36	ZD6606	C32
C2491	E30	C2845	B4	J0223	E2	R3243	B19	R3501	A26	R3673	E36	ZD6607	B33
C2492	E25	C2913	A5	L405	D15	R3246	D19	R3502	A25	R3674	B39	ZD6821	D1
C2500	A25	C2914	A6	L5000	D31	R3247	C19	R3508	A30	R3675	B37		

MISCELLANEOUS ADJUSTMENTS

B+ CHECK

Tune in a picture. Set picture and brightness to normal. Connect a digital voltmeter to L5551. Check for 129.0V ±1.0V.

SERVICE ALIGNMENT MODE INFORMATION (SAM)

To enter service alignment mode, turn the receiver on, then press 0, 6, 2, 5, 9, 6, and press the status button on the remote, without allowing time out between key entries. The first menu is the main menu, there are three selections in the main menu.

At any time within the menus, pressing the menu button will cause the receiver to display the main menu. If the exit item is selected, the receiver will display the previous menu.

Press menu button for next menu. Press adjust right/left to either turn selection on/off or to proceed to next menu. Press the adjust up/down arrows to make a selection.

L90US1 1.5	SAM
AKB	0
VSD	0
TUNER	>
WHITE TONE	>
GEOMETRY	>
AUDIO	>

Only four selections are displayed at a time. Use arrow up/down buttons for more.

L90US1 1.5	SAM
AKB	0
VSD	0
TUNER	>
WHITE TONE	>
GEOMETRY	>
AUDIO	>

AGC	10
YD	12
CL	4
IF-PLL	32
AFA	1
AFB	1
AFW	275kHz

The following chart contains specific information to the AUDIO selection on the main menu.

L90US1 1.5	SAM
AKB	0
VSD	0
TUNER	>
WHITE TONE	>
GEOMETRY	>
AUDIO	>

AT	3
(Attack time at AVL)	
(Normal setting is 3)	

The following chart contains specific information to the WHITE TONE selection on the main menu.

L90US1 1.5	SAM
AKB	0
VSD	0
TUNER	>
WHITE TONE	>
GEOMETRY	>
AUDIO	>

Tune in a white raster pattern.

Delta Warm	>
Delta Cool	>
Normal	>
Red	32
Green	17
Blue	18
Red	0
Green	0
Blue	6
Red	0
Green	-5
Blue	-14

The following chart contains specific information to the GEOMETRY selection on the main menu.

L90US1 1.5	SAM
AKB	0
VSD	0
TUNER	>
WHITE TONE	>
GEOMETRY	>
AUDIO	>

Tune in a crosshatch pattern.

VAM	35	Adjust for vertical height.
VSL	37	Adjust for vertical centering.
SBL	0	Service blanking / no vertical sweep 1=On/0=Off.
HSB	31	Adjust for horizontal centering.
H60	10	Set to 10 (factory preset value).
V60	5	Set to 5 (factory preset value).
VSC	17	Adjust for same size squares at top and bottom.
VSH	35	Adjust for vertical centering.

MISCELLANEOUS ADJUSTMENTS continued

SERVICE DEFAULT MODE INFORMATION (SDM)

To enter service default mode, turn the receiver on, then press 0, 6, 2, 5, 9, 6, and press the menu button on the remote, without allowing time out between key entries.

The first number (0010) is a run timer. The display will increment based on the amount of time the receiver has been on.

The second number (L90US1 1.5) is the software ID (L90), the software version (US) for the USA, and the cluster number (1) for English language, and (1.5) for the version number.

The letters SDM indicate that the service default mode is active.

The next line a two letter code of the name of one of the features of the receiver. Next to it is the on set value.

The next line shows the Option bytes of OB1 thru OB7.

The next line shows the error code number. The most recent errors will be displayed next to ERR.

See table below for error codes information.

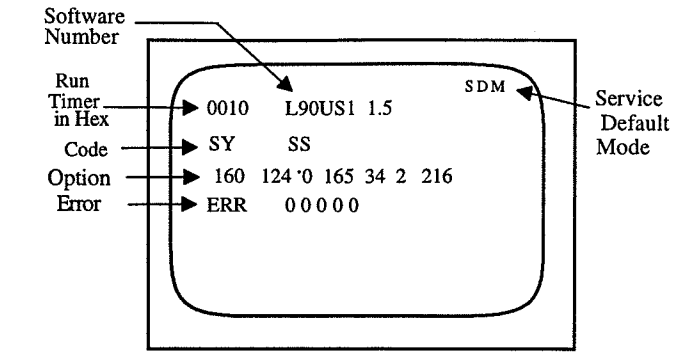
Description	Description
0 No error.	7 General I2C Bus error.
1 X-Ray/ over voltage protect active.	8 Internal RAM error.
2 High beam current protect active.	9 EEPROM check sum error.
3 Vertical protect active.	10 I2C error, EEPROM error.
4 I2C error communicating.	11 I2C error, Tuner error (PLL).
5 Signal processor start-up error.	
6 I2C error communicating / IC7250.	NOTE : I2C = (SCL/SDA).

WHITE BALANCE

Tune in a white raster pattern. Set the brightness, sharpness, tint, and picture to midrange. Set the color and screen to minimum. Enter service alignment mode, select the white tone adjustment. Set red to the value of 32, set the blue to the value of 32, then set the green to a value that will give a white raster. Tune in a black and white picture and adjust the red and blue for best white balance at all brightness levels.

COLOR PURITY

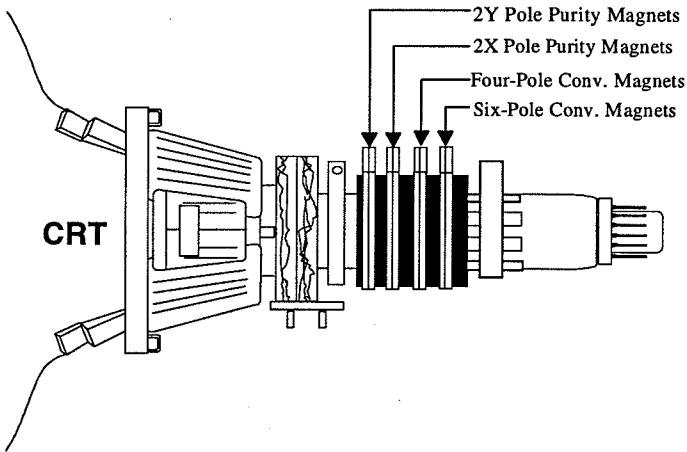
Operate the receiver for 15 minutes. Use a degaussing coil to demagnetize the CRT and mounting hardware. Position the convergence/purity assembly with the 2Y pole rings over the gun element gap nearest the CRT bell gap (between G2 and G3). Loosen the yoke and remove the yoke wedges. Slide the yoke against the bell of the CRT and tighten the clamp enough to hold the yoke in position. Tune in a single-cross pattern and adjust the 2Y pole rings for parallel red and blue lines, as centered and overlapped as possible. Tune in a white screen. Spread the 2X pole rings for a centered green area. Move the yoke back for best green purity and tighten the yoke clamp just enough to hold the yoke in position. Perform convergence adjustment.



CONVERGENCE

Operate the receiver for fifteen minutes. Tune in a dot pattern. Adjust the 4 pole magnet tabs to converge the red and blue dots at the center of the screen. Adjust the 6 pole magnet tabs to converge the red/blue dots with the green dots at the center of the screen. Spread the two tabs of each set of magnets equally and opposite to converge vertically, and rotate both tabs in the same direction to converge horizontally. Since the 4 and 6 pole magnets interact, repeat the adjustment until center convergence is correct. Tune in a crosshatch pattern. Remove the rubber wedges between the deflection yoke and the CRT. Tilt the deflection yoke up or down to converge the vertical lines at the top and bottom of the screen, and the horizontal lines at the right and left sides of the screen. Tilt the deflection yoke right or left to converge the horizontal lines at the top and bottom of the screen, and vertical lines at the right and left sides of the screen. Repeat convergence procedure as necessary to obtain best overall convergence.

CRT NECK ASSEMBLY

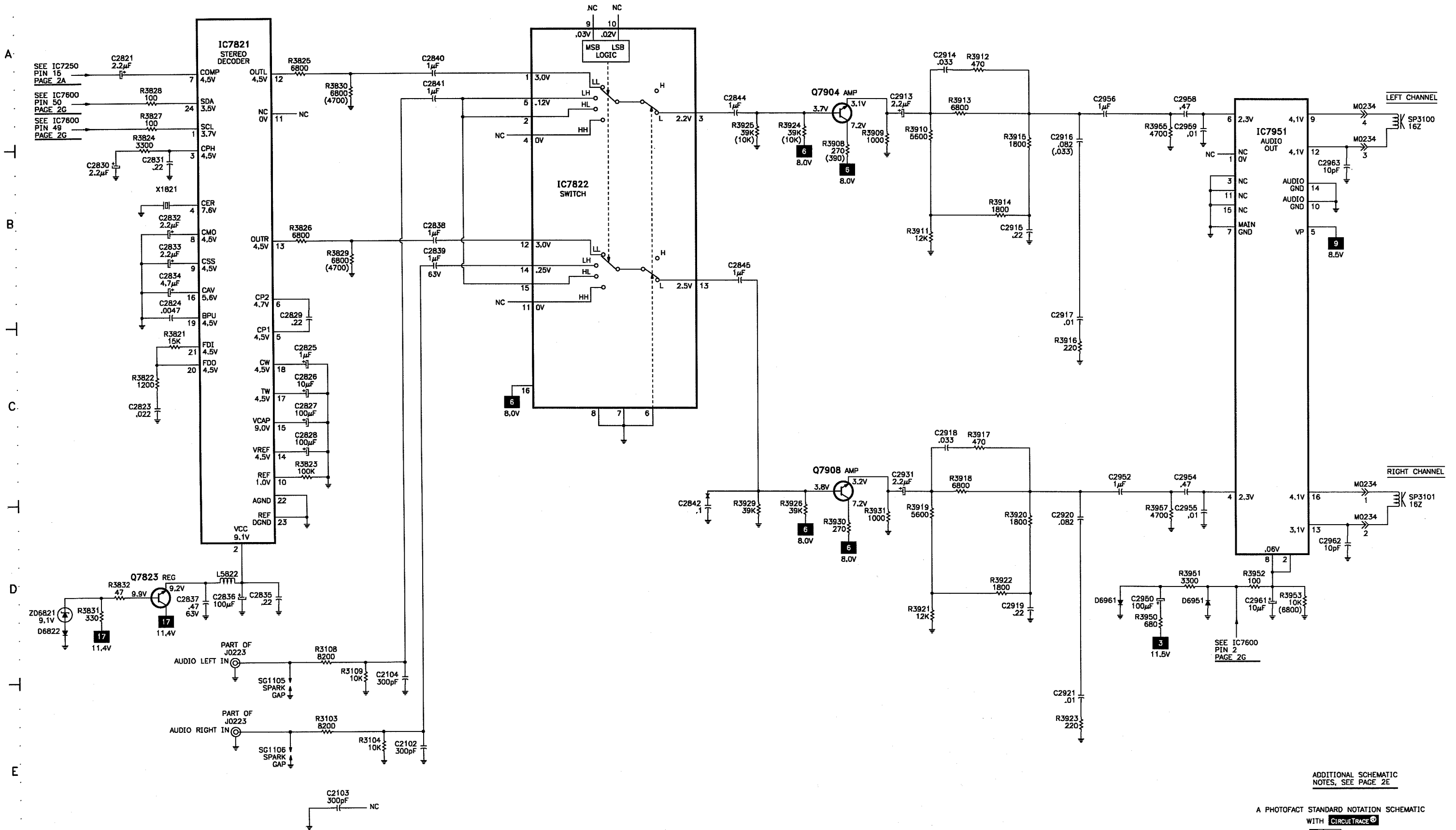


OPTION CODE AND STATUS

On the second line, a two letter code represents one of the features of the set. The number following will be either on or off, indicating if that feature is active or not.

OPTION	OP	Value	On Set Value
System	SY	Not used in US models.	SS
Option Byte 1	OB1	Option Byte 1 through 7 are to be set at the factory for feature listing for each chassis. Each can be set to value 0 - 255.	160
Option Byte 2	OB2		124
Option Byte 3	OB3	Warning : Before making changes to any value, record on set value for all the options.	0
Option Byte 4	OB4		165
Option Byte 5	OB5		34
Option Byte 6	OB6		2
Option Byte 7	OB7		216
Slider Bar Value Display	DP	OFF/ON	ON
Animated Menu	AM	OFF/ON	ON
Hospital Mode	HS	OFF/ON	OFF
Hotel Mode	HT	OFF/ON	OFF
Demo Mode	DM	OFF/ON	OFF
Games Mode	GM	OFF/ON	OFF
Clock	CK	OFF/ON	OFF
Child Lock	CL	OFF/ON	ON
V- Chip	VC	OFF/ON	ON
V- Chip Block Unrated	VU	OFF/ON	ON
Block No Rating (V- Chip)	VN	OFF/ON	ON
Smart Sound	SS	OFF/ON	OFF
Smart Picture	SP	OFF/ON	OFF
Remote Control Type	RC	OFF = RC0701/04 remote control / ON = All other remote control	OFF
Channel Select Time Window	TW	OFF = 2-second time window / ON = 5-second time window	OFF
Surf	SF	OFF/ON	OFF
Video Mute (Channel Change)	VM	OFF/ON	OFF
Tuner Type	TN	OFF = Philips tuner / ON = ALPS tuner	ON
Fine Tuning	FT	OFF/ON	OFF
AV1	XT	OFF/ON	ON
AV2	2X	OFF/ON	OFF
Auto Cable Detect	CD	OFF/ON	ON
Blue Mute	BM	OFF/ON	OFF
No Ident (Auto Standby)	NI	OFF/ON	ON
Noise Reduction	NR	OFF/ON	ON
Contrast Plus	CP	OFF/ON	OFF
Color Temperature	CT	OFF/ON	OFF
East - West Function	EW	OFF/ON	OFF
Video Processor Standby	BS	OFF/ON	ON
Video Processor Auto Startup	AS	OFF/ON	OFF
Bass/Treble Control/Boost	BT	OFF/ON	OFF
Incredible Surround	IS	OFF/ON	OFF
Volume Limiter	VL	OFF/ON	OFF
Ultra Bass	UB	OFF/ON	OFF
Automatic Volume Leveller (AVL)	LV	OFF/ON	OFF
SAP - Mono/ Stereo	DU	OFF/ON	ON
Audio Out (Fixed/Variable)	AO	OFF/ON	OFF
Sound Type	ST	BG / I / DK / M (Should be set to M)	M
Sound Board	SB	DB = DBX / SAP (BTSC). EC = BTSC stereo (No SAP). MA = Mono All. MS = Bi Sonic (Mono by tuner, stereo by A/V jacks).	EC

AUDIO SCHEMATIC



ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 2E

A PHOTOFAC STANDARD NOTATION SCHEMATIC
WITH CIRCUITTRACE®

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PHILIPS MAGNAVOX

MODELS MS2730, MS2730C221

A-

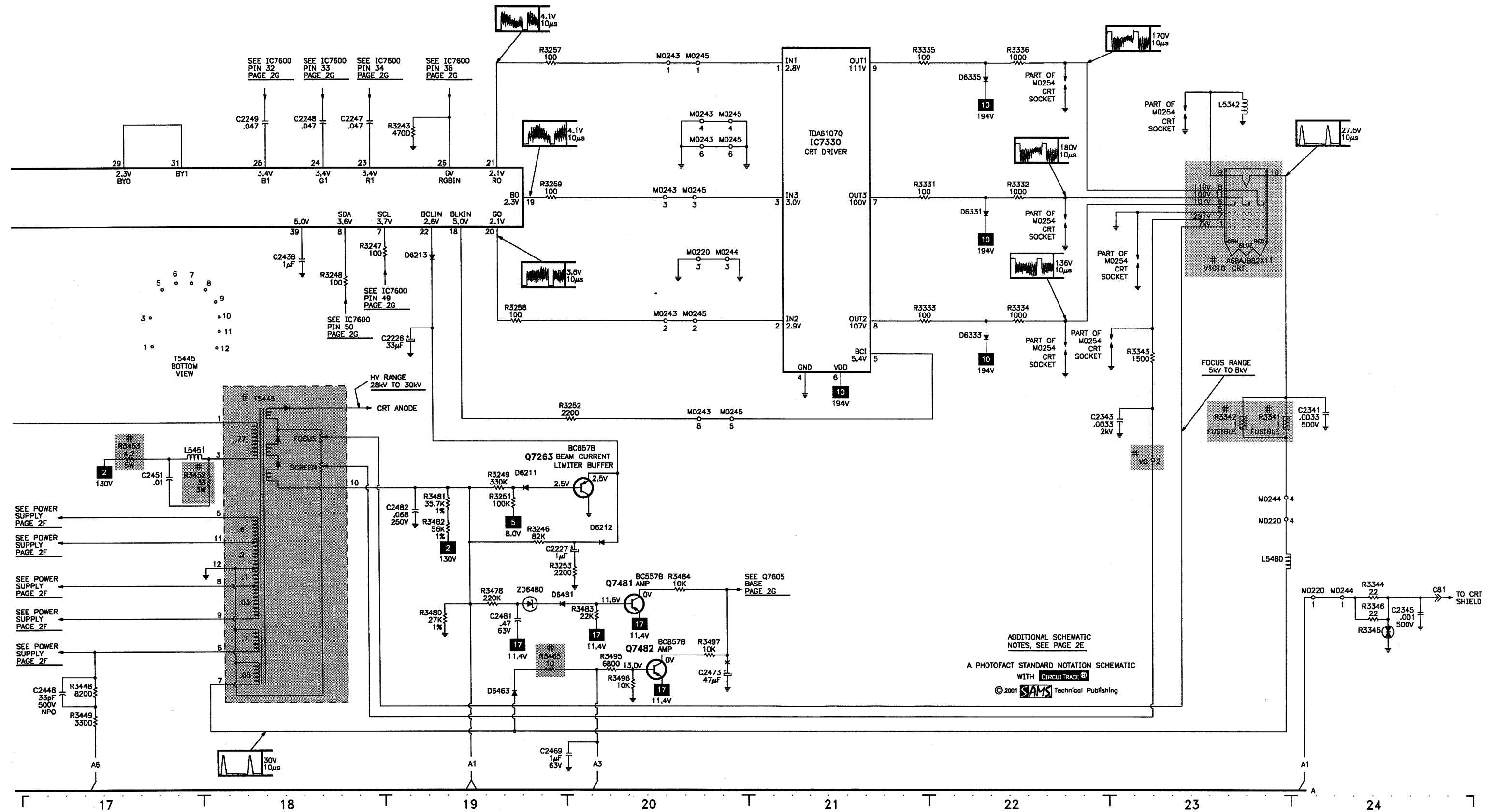


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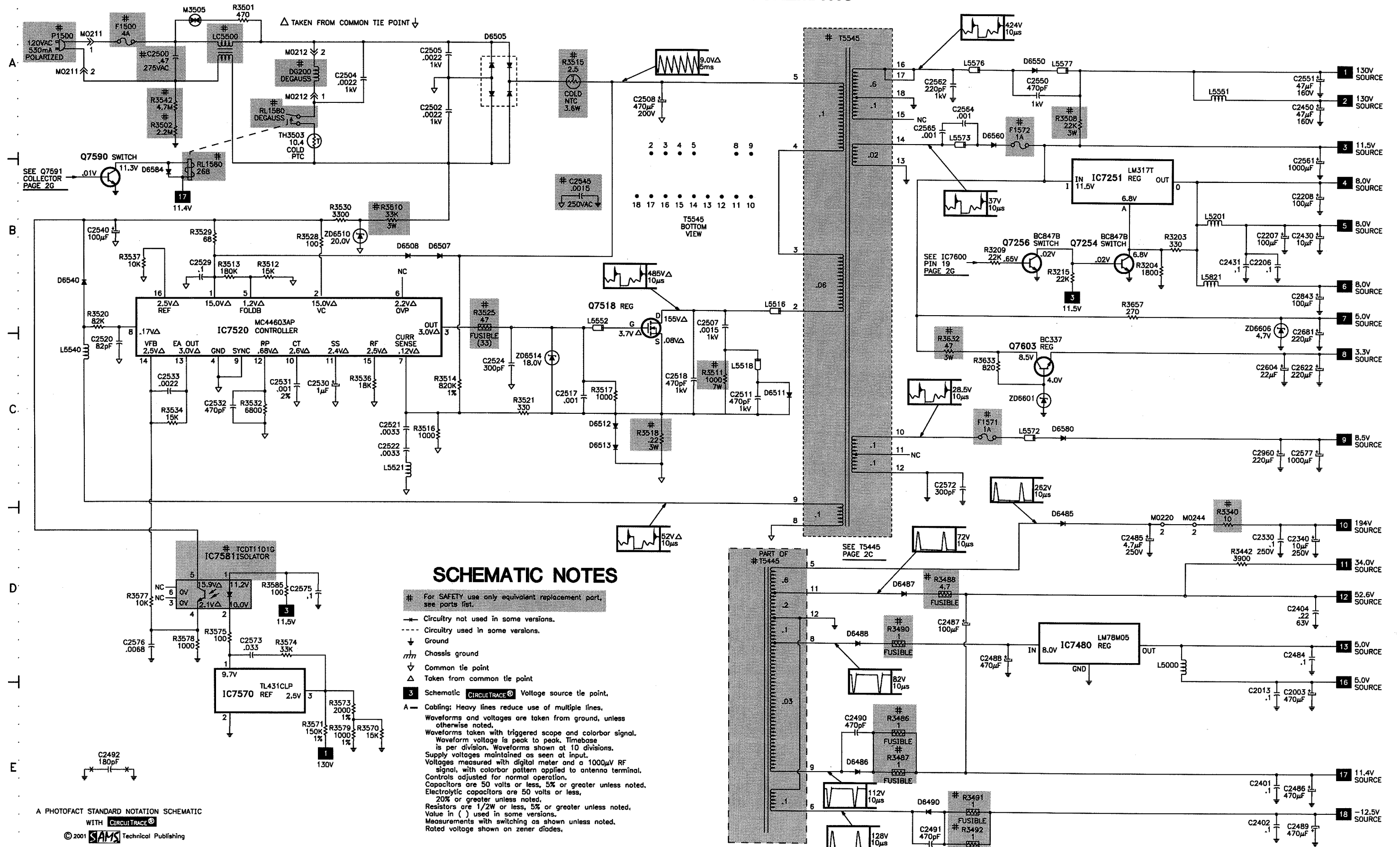
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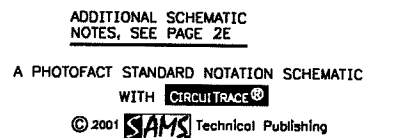
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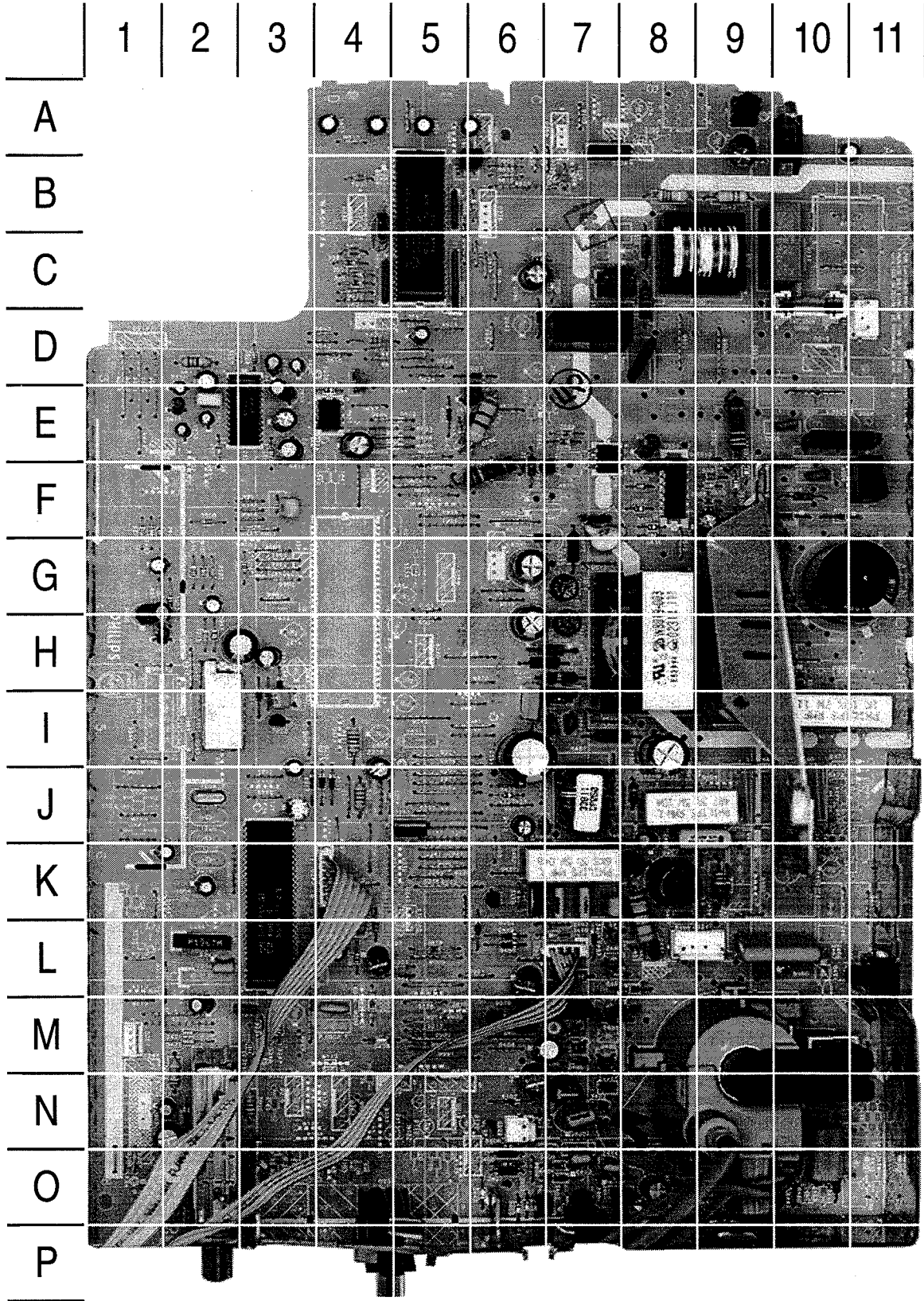
POWER SUPPLY SCHEMATIC



H



MAIN BOARD - TOP VIEW



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MAIN BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

C2002	O2	C2821	E2	L5201	J4	R3453	J8	R3913	F1
C2003	N2	C2825	D3	L5202	L4	R3454	K9	R3914	F1
C2011	N2	C2826	D3	L5451	K8	R3458	K9	R3917	G2
C2201	L2	C2827	E3	L5457	K8	R3461	K7	R3918	G2
C2203	M2	C2828	E3	L5480	L7	R3462	K7	R3922	G2
C2207	L4	C2830	E2	L5516	H9	R3463	L11	R3930	G3
C2208	J4	C2832	E2	L5518	I10	R3465	L7	R3950	E5
C2215	L4	C2833	E3	L5521	F9	R3466	J7	R3952	G2
C2226	J3	C2834	E3	L5540	F9	R3467	J8	R3955	H2
C2227	J3	C2836	D2	L5551	I7	R3468	K6	R3957	H2
C2401	O8	C2837	I3	L5552	G9	R3478	O10	RL1580	D7
C2402	O6	C2839	F3	L5572	G7	R3480	O10	SW1600	A6
C2403	N7	C2843	H3	L5573	H7	R3481	N10	SW1601	A5
C2404	O7	C2913	G1	L5576	H7	R3482	M11	SW1602	A4
C2409	O7	C2931	G2	L5577	I6	R3483	O9	SW1603	A4
C2426	M3	C2950	G1	L5600	C4	R3484	O9	SW1606	A11
C2429	K2	C2960	H3	L5601	B4	R3486	M7	T5445	M9
C2430	K2	C2961	H2	L5620	D4	R3487	M7	T5461	J7
C2448	L7	D6211	J4	L5821	I4	R3488	O8	T5545	H8
C2450	I8	D6212	J3	L5822	D2	R3490	M7	TH3503	D8
C2451	L8	D6213	J4	LC5500	C8	R3491	N7	TU1000	N2
C2456	K7	D6401	O7	LD6690	A10	R3492	N7	X1001	M4
C2457	J9	D6403	O7	M0211	D11	R3501	C8	X1003	L2
C2458	J8	D6449	L6	M0212	C7	R3502	B8	X1200	L4
C2459	K8	D6450	L6	M0220	L7	R3508	F6	X1208	J2
C2461	J7	D6460	L10	M0221	L9	R3510	E9	X1660	B4
C2462	K7	D6463	L7	M0222	N6	R3511	I10	X1821	E2
C2463	M11	D6465	K9	M0234	A7	R3513	F9	ZD6008	N2
C2465	L10	D6466	J9	M0243	K4	R3514	F10	ZD6402	N6
C2469	K7	D6481	O10	M3505	C8	R3515	F11	ZD6404	O7
C2473	J6	D6485	L8	Q7460	L11	R3517	G9	ZD6464	L6
C2481	O9	D6486	M7	Q7461	K6	R3518	G10	ZD6480	O10
C2482	O10	D6487	O9	Q7462	K6	R3520	F9	ZD6510	E9
C2484	M6	D6488	M7	Q7463	M6	R3525	F9	ZD6514	G9
C2485	L6	D6490	M7	Q7481	O9	R3528	F9	ZD6601	E5
C2486	N6	D6505	E10	Q7518	H10	R3529	F9	ZD6606	D6
C2487	O8	D6507	F10	Q7603	E6	R3530	F9	ZD6607	D6
C2488	M7	D6508	F10	Q7823	I3	R3532	F8	ZD6821	I3
C2489	N7	D6511	I10	R3000	O2	R3536	F8		
C2490	M7	D6512	G9	R3001	O2	R3537	F8		
C2491	N7	D6513	G10	R3010	M4	R3542	B9		
C2500	C10	D6540	F9	R3016	M3	R3571	F6		
C2502	F10	D6550	I7	R3103	O4	R3575	E7		
C2504	C8	D6560	H7	R3108	O4	R3577	F8		
C2505	E10	D6580	F6	R3204	J4	R3585	E7		
C2507	H10	D6584	D6	R3208	L4	R3595	C7		
C2508	G11	D6585	B6	R3247	M3	R3596	C6		
C2511	H10	D6822	H3	R3248	M3	R3607	C5		
C2517	G9	F1500	C10	R3401	O6	R3608	B5		
C2518	H9	F1571	G7	R3402	O6	R3609	C4		
C2530	E8	F1572	H7	R3403	O6	R3618	L5		
C2531	F8	IC7250	L3	R3405	O6	R3630	B6		
C2540	F9	IC7251	J5	R3406	N6	R3632	E6		
C2545	F7	IC7401	O7	R3407	O6	R3633	E5		
C2550	I7	IC7480	M7	R3408	O6	R3651	C4		
C2551	I6	IC7520	F8	R3409	N7	R3652	C4		
C2561	H6	IC7570	F7	R3410	N7	R3653	E4		
C2562	I7	IC7581	E7	R3411	N6	R3657	F6		
C2577	G6	IC7600	C5	R3421	M2	R3661	C4		
C2586	C6	IC7601	E4	R3422	M2	R3825	E2		
C2604	E6	IC7680	A9	R3433	J6	R3826	E3		
C2613	B6	IC7821	E3	R3438	M4	R3827	D2		
C2619	D5	IC7951	I2	R3442	O6	R3828	D3		
C2622	E4	J0223	P4	R3448	L7	R3831	I3		
C2629	D4	L5000	N3	R3449	L7	R3908	F2		
C2681	A9	L5004	M2	R3452	K8	R3912	F1		

Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- When ordering parts, state the model number, part number, and description.

Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

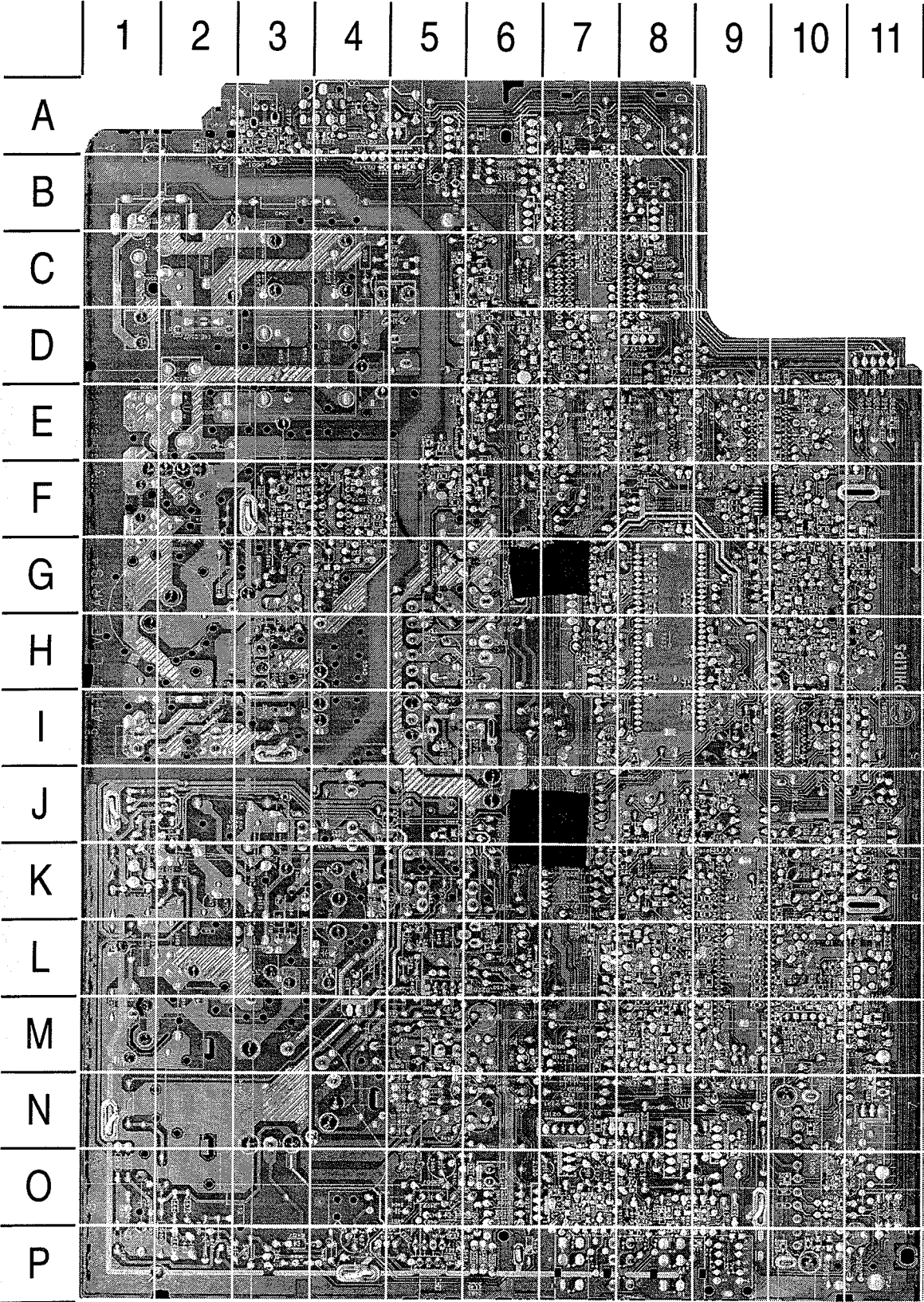
Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- NTE Electronics, Inc. (NTE)
- Sencore, Inc.

MAIN BOARD - BOTTOM VIEW



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MAIN BOARD - BOTTOM VIEW, GRIDTRACE
LOCATION GUIDE

C2001	N10	C2823	E9	R3225	K9	R3676	E8
C2004	M10	C2824	E9	R3228	M8	R3677	F8
C2005	M8	C2829	E9	R3243	K9	R3680	A3
C2006	M9	C2831	E10	R3246	J8	R3681	A3
C2013	O10	C2835	E9	R3249	J8	R3682	B6
C2102	O8	C2838	F9	R3251	J8	R3683	A7
C2103	O7	C2840	F10	R3252	L9	R3684	A3
C2104	O8	C2841	F9	R3253	J9	R3821	E9
C2202	M10	C2842	F9	R3257	K9	R3822	E9
C2204	L8	C2844	F10	R3258	K9	R3823	E9
C2205	L8	C2845	F9	R3259	K9	R3824	E10
C2206	L9	C2914	G11	R3420	J10	R3829	F9
C2209	L9	C2915	G10	R3423	M7	R3830	F10
C2211	L8	C2916	F11	R3424	K10	R3832	I9
C2212	M8	C2917	F11	R3425	K10	R3909	F10
C2213	L8	C2918	G10	R3426	M9	R3910	G11
C2214	L9	C2919	G10	R3428	L10	R3911	G10
C2216	L9	C2920	G10	R3429	K10	R3915	G11
C2220	J10	C2921	G10	R3431	K10	R3916	F10
C2221	K9	C2952	H10	R3432	K11	R3919	G10
C2222	K9	C2954	H10	R3436	L11	R3920	G10
C2247	K8	C2955	H10	R3437	L9	R3921	G10
C2248	K9	C2956	H10	R3447	M6	R3923	G10
C2249	K8	C2958	H10	R3464	L6	R3924	F10
C2405	P5	C2959	H10	R3469	L6	R3925	F10
C2407	P5	C2962	E11	R3495	L5	R3926	G9
C2420	L9	C2963	E11	R3496	L5	R3929	G10
C2428	L9	D6591	C5	R3497	J5	R3931	H10
C2431	K9	D6951	H11	R3512	F3	R3951	H11
C2437	L9	D6961	H11	R3516	F4	R3953	H11
C2438	K9	IC7822	F9	R3521	F2	ZD6113	O8
C2440	L9	Q7254	J8	R3534	G4		
C2441	L9	Q7256	D6	R3570	F5		
C2492	P6	Q7258	J9	R3573	F5		
C2520	F3	Q7263	J9	R3574	E6		
C2521	F3	Q7266	M8	R3578	F4		
C2522	F3	Q7482	J5	R3579	F5		
C2524	G3	Q7590	B6	R3592	C6		
C2529	F3	Q7591	C6	R3594	C5		
C2532	F4	Q7592	C6	R3597	C6		
C2533	F4	Q7604	D7	R3598	D6		
C2564	H6	Q7605	C6	R3599	C6		
C2565	H6	Q7608	E8	R3611	D7		
C2572	H5	Q7609	E7	R3612	D7		
C2573	F6	Q7904	F10	R3613	D7		
C2575	E5	Q7908	G10	R3615	D7		
C2576	F4	R3014	O10	R3619	C7		
C2609	C6	R3015	P10	R3629	D6		
C2615	B7	R3021	M9	R3631	B7		
C2616	D8	R3104	O8	R3634	E6		
C2617	D8	R3109	O8	R3635	E6		
C2618	C7	R3123	P8	R3636	E6		
C2620	C7	R3200	L9	R3637	D6		
C2621	C7	R3201	L9	R3654	E8		
C2623	E7	R3203	K7	R3655	D8		
C2624	E8	R3205	L9	R3662	B7		
C2625	B7	R3206	M8	R3663	E7		
C2626	B7	R3209	D6	R3664	E7		
C2627	B7	R3212	L8	R3665	B7		
C2628	B7	R3213	P8	R3666	E8		
C2630	B7	R3215	F7	R3667	E7		
C2631	E7	R3217	M9	R3672	B7		
C2633	C7	R3218	J11	R3673	B7		
C2679	C7	R3219	J9	R3674	E8		
C2697	A8	R3220	L8	R3675	E8		

TEST EQUIPMENT

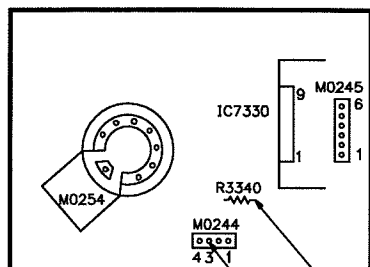
Test equipment listed by participating manufacturer illustrates typical or equivalent equipment used by Sams engineers to obtain measurements. This equipment is compatible with most types used by field service technicians.

Equipment	Sencore No.
Oscilloscope	SC3100
Generators	
RGB	CM2125
Multiburst Signal	VG91
Color Bar	VG91
TV Stereo	VG91
Digital VOM	SC3100
Frequency Meter	SC3100
Hi-Voltage Probe	HP200
Accessory Probes	TP212
Isolation Transformer	PR570
Capacitance Analyzer	LC102
CRT Analyzer	CR7000
AC Leakage Tester	PR570
Inductance Analyzer	LC102
Flyback Yoke Tester	TVA92
Field Strength Meter	SL753 -
Transistor Tester	TF46
Horizontal Analyzer	HA-2500
Video Analyzer	VG91, TVA92

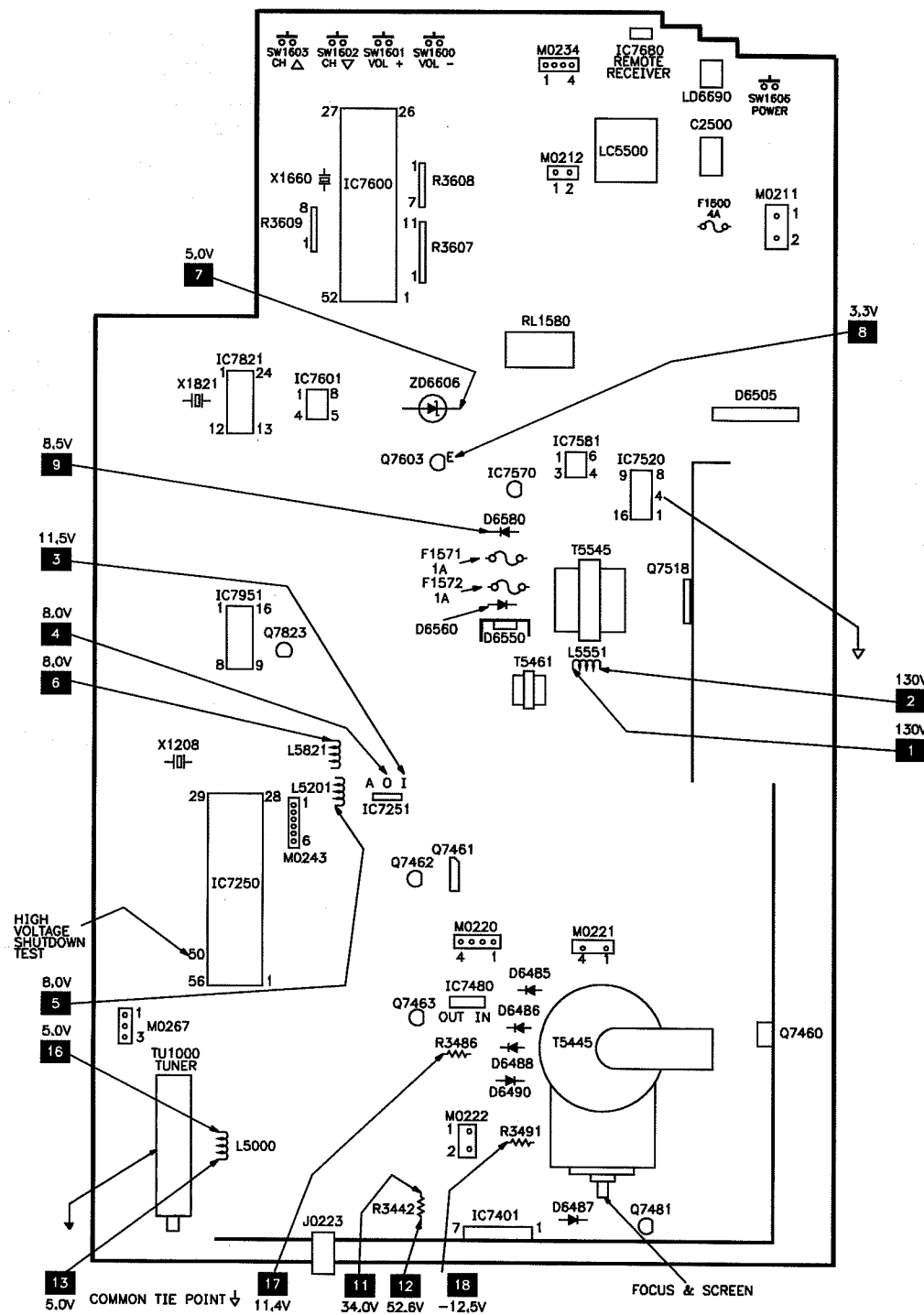
PHILIPS MAGNAVOX

MODELS MS2730, MS2730C221

CRT BOARD

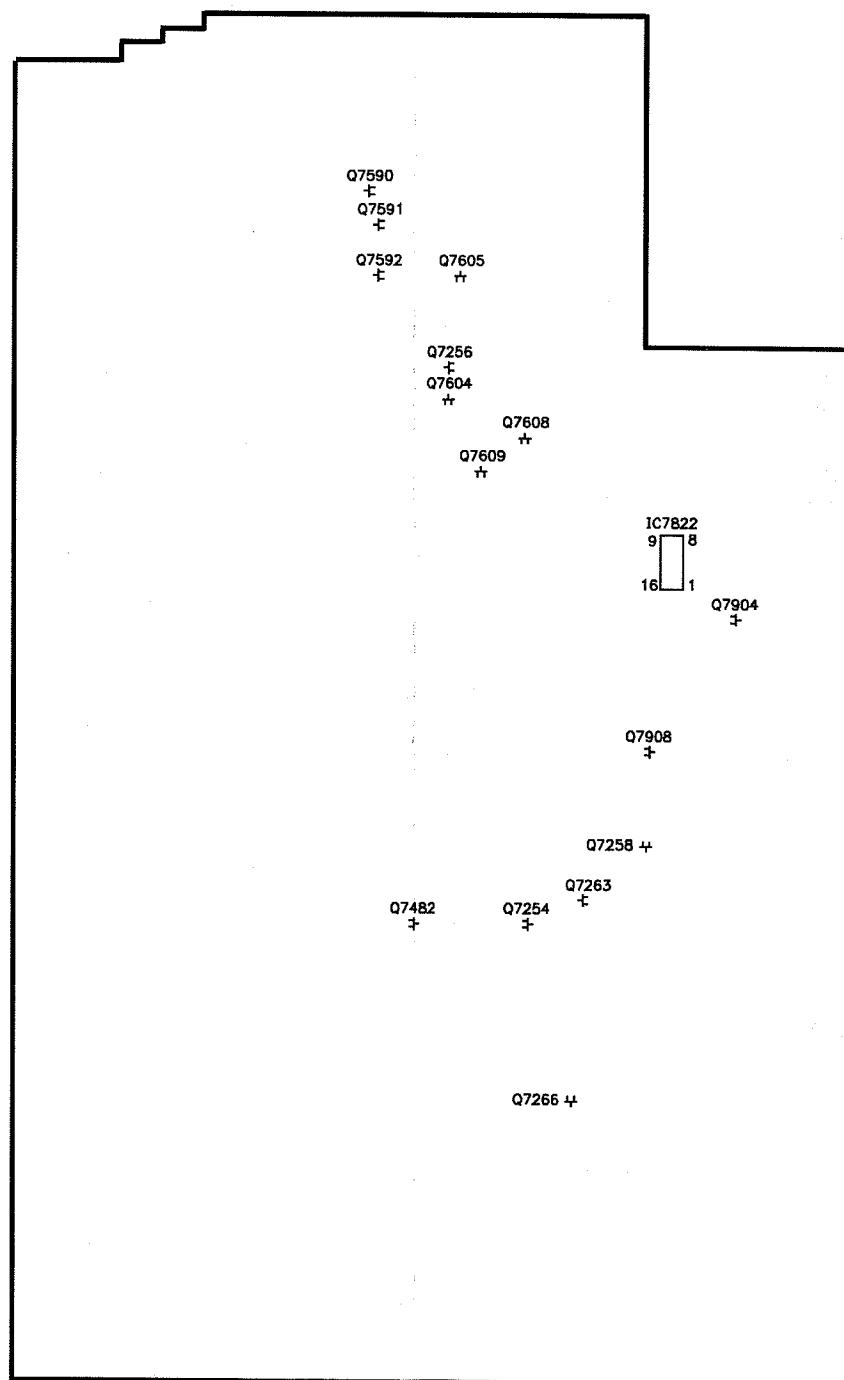


MAIN BOARD - TOP VIEW

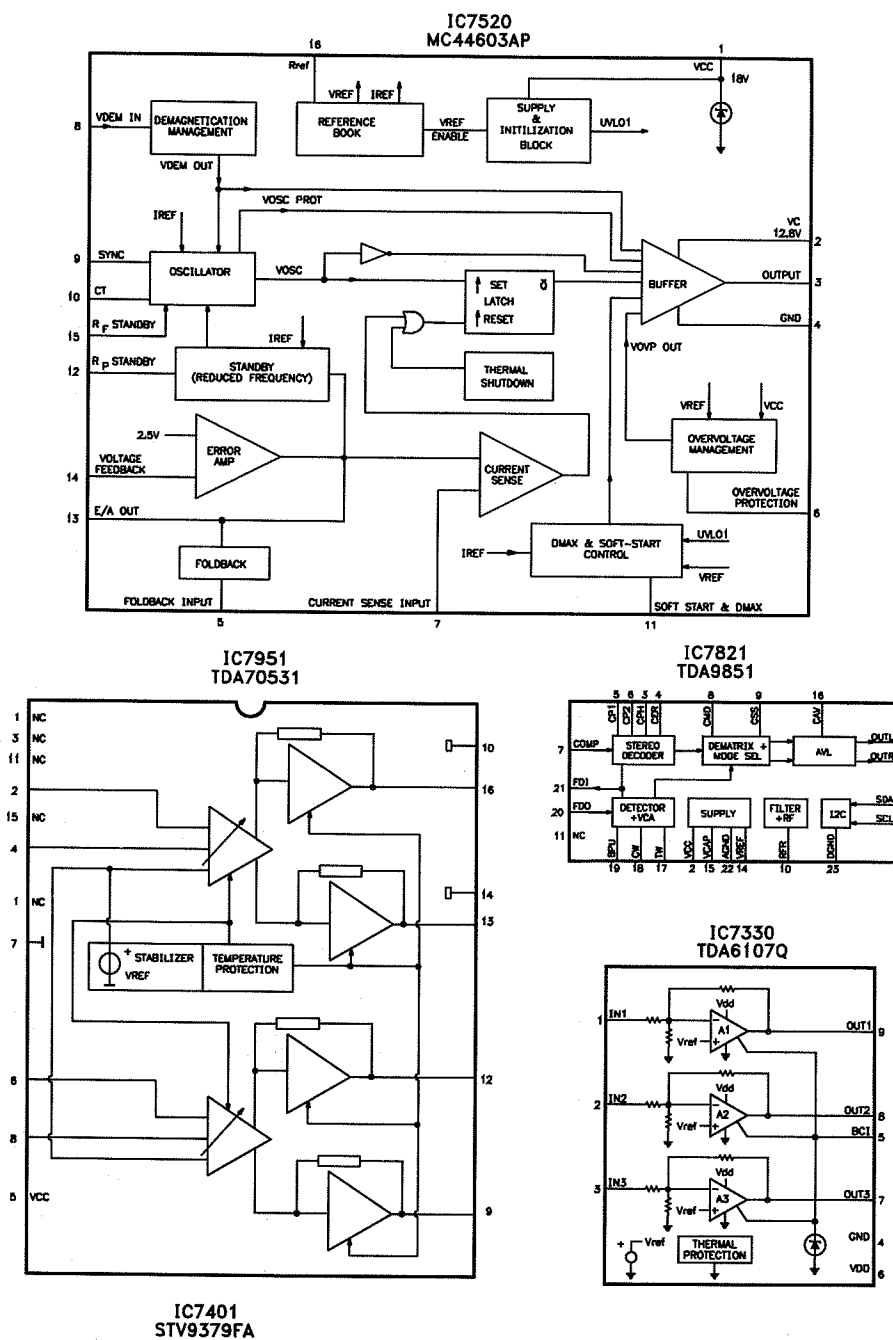


PLACEMENT CHART

MAIN BOARD - BOTTOM VIEW



IC FUNCTIONS



PARTS LIST

Item No.	Type No.	Mfr. Part No.	NTE Part No.	Item No.	Function/Rating	Mfr. Part No.	Notes	Item No.	Function/Rating	Mfr. Part No.	Notes
D6211, 12, 13	1N4148	3198 010 10010	NTE519	C2511, 18	470pF 10% 1kV	3198 019 64710	-	SW1606	Switch	2422 128 02742	Power
D6331, 33, 35	BAV21	3198 010 10070	NTE177	C2531	.001 2% 50V	2020 310 90049	-	# T5445 (1)	Horizontal Output	3128 138 20941	-
D6401, 03	BYD33D	9337 234 00133	NTE569	# C2545	.0015 250VAC	2020 554 90128	-	T5461	Horizontal Drive	3128 138 33811	-
D6449, 50	1N4148	3198 010 10010	NTE519	C2550	470pF 10% 1kV	3198 019 64710	-	# T5545	Power	2422 531 02314	-
D6460	-	9336 215 80112	-	C2562	220pF 10% 1kV	3198 019 62210	-	TH3503	10.4 Cold PTC	2120 661 00019	-
D6463	1N4148	3198 010 10010	NTE519	# DG200	Degaussing	2422 549 43967	-	TU1000	Tuner	3139 147 16412	-
D6465, 66	BYD33J	9337 234 20133	NTE569	# F1500	Fuse	2422 086 10905	-	# V1010	CRT	-	A68AJB82X11
D6481	1N4148	3198 010 10010	NTE519	# F1571, 72	Fuse	2422 086 10779	-	-	CRT	9301 787 60472	A68AJB82X
D6485	BYD33J	9337 234 20133	NTE569	IC7680	Receiver	9322 154 48667	-	X1001	Filter	2422 549 42501	4.5MHz
D6486	EGP20DL-5300	9322 100 13682	-	J0223	Jack	2422 026 04963	-	X1003	Filter	2422 549 42433	SAW
D6487	BYD33D	9337 234 00133	NTE569	# L405	Yoke	3313 203 01242	-	X1200	Trap	2422 549 40807	4.5MHz
D6488, 90	BYV27-200	9322 126 72673	NTE588	L5000	5.6μH	3198 018 25680	-	X1208	Crystal	2422 543 00832	3.58MHz
D6505	-	9322 138 08667	NTE5330	L5004	.82μH	2422 535 97314	-	X1660	Crystal	2422 543 00488	12MHz
D6507, 08	BYD33J	9337 234 20133	NTE569	L5201	22μH	3198 018 22290	-	X1821	Crystal	2422 540 98344	514kHz
D6511	BYV95C	9335 001 80133	NTE569	L5202	8.2μH	3198 018 16880	-	-	Buttons	3139 124 27351	Control
D6512, 13	1N5062	3198 010 10120	NTE506	L5342	22μH	3198 018 22290	-	-	Buttons	3139 124 26444	Power
D6540	BAV21	3198 010 10070	NTE177	L5451	27μH	2422 535 96614	-	-	Fuse Holder	3122 358 71251	For F1500
D6550	BY229X-800	9340 380 30127	-	L5457	Horizontal Linearity	3128 138 53241	-	-	Magnet	2422 549 43385	Purity/Convergence
D6560	EGP20DL-5300	9322 100 13682	-	L5480	39μH	2422 535 97336	-	-	PC Board	3139 178 89151	Main
D6580	-	9339 577 60673	NTE585	L5516	Ferrite Bead	3198 018 90020	-	-	Transmitter	3139 228 88101	Remote
D6584, 85	1N4148	3198 010 10010	NTE519	L5518	Ferrite Bead	3198 018 90010	-	-	Wedge	3135 013 00311	Yoke Positioning (3 Used)
D6591	BAS16WS	9322 031 99685	-	L5521	2.2μH	3198 018 12280	-	# For SAFETY use only equivalent replacement part.			
D6822	1N4148	3198 010 10010	NTE519	L5540	4.7μH	3198 018 14780	-	(1) Screen and focus controls are part of T5445.			
D6951, 61	BAS16WS	9322 031 99685	-	L5551	27μH	2422 535 95366	-	TUNER VOLTAGE CHART			
IC7250	TDA8846S1	9352 620 26112	-	L5552	Ferrite Bead	3198 018 90010	-				
IC7251	LM317T	9337 220 80682	NTE956	L5572, 73, 76	Ferrite Bead	3198 018 90020	-	TUNER TERMINAL GUIDE			
IC7330	TDA6107Q	9352 576 50112	-	L5577	Ferrite Bead	3198 018 90010	-				
IC7401	STV9379FA	9322 121 47687	-	L5600, 01	8.2μH	3198 018 18280	-	NOTE: VHF Low Band voltages taken on channel 2.			
IC7480	LM78M05	9322 028 93682	-	L5620	8.2μH	3198 018 16880	-	VHF High Band voltages taken on channel 7.			
IC7520	MC44603AP	9322 108 36682	-	L5821	100μH	3198 018 21010	-	UHF Band voltages taken on channel 14			
IC7570	TL431CLP	9337 711 00676	NTE999	L5822	-	3198 018 21890	-	Pin			
# IC7581	TCDT1101G	9338 431 30682	-	M0254	Socket	2422 500 80022	-				
IC7600	SAA5543PS/M4/0168	9352 670 96112	-	M3505	Surge Protector	2422 549 43073	-	VHF Low Band	VHF High Band	UHF Band	
IC7601	ST24W04B6	9322 097 23682	-	# LC5500	Line Filter	2422 549 43432	-	1 (AGC)	2.2V	2.2V	1.9V
IC7821	-	9352 374 70112	-	# P1500	Line Cord	3135 010 03831	-	2 (VT)	1.0V	4.3V	3.7V
IC7822	HEF4052BT	9333 729 50653	NTE4052BT	# R3340	10 5% 1/3W	2306 204 03109	-	3 (NC)	1.3V	1.3V	1.3V
IC7951	-	9351 861 60112	-	# R3341, 42	1 5% Fusible	2306 204 03108	-	4 (SCL)	3.8V	3.8V	3.8V
LD6690	LTL-307P	9322 033 95682	-	R3345	VDR	2122 550 00152	-	5 (SDA)	3.6V	3.6V	3.6V
Q7254, 56, 58	BC847B	3198 010 42030	NTE2408	# R3405, 07	2000 1% .6W	2322 156 22002	-	6 (+5V)	5.0V	5.0V	5.0V
Q7263	BC857B	3198 010 42150	NTE2409	# R3409	1.5 5% Fusible	2306 204 03158	-	7 (+5V)	5.0V	5.0V	5.0V
Q7266	BC847B	3198 010 42030	NTE2408	# R3452	33 5% 3W	3198 012 33390	-	8 (NC)	0V	0V	0V
Q7460	BU1508DX	9340 170 50127	NTE2635	# R3453	4.7 5% 5W Wirewound	2322 251 41478	-	9 (+33V)	34.0V	34.0V	34.0V
Q7461	BF819	9335 354 50127	NTE198	# R3454	33K 5% 2W	2322 194 63333	-	10 (GND)	0V	0V	0V
Q7462	BC547B	3198 020 40030	NTE123AP	# R3462	6800 5% 5W	2322 257 41682	-	11 (IF)	0V	0V	0V
Q7463, 81	BC557B	3198 020 40110	NTE159	# R3465	10 5% 1/3W	2306 204 03109	-	NOTE: VHF Low Band voltages taken on channel 2. VHF High Band voltages taken on channel 7. UHF Band voltages taken on channel 14			
Q7482	BC857B	3198 010 42150	NTE2409	R3466	39K 1%	2322 156 23903	-				
Q7518	STH10NC60FI	9322 155 66687	-	R3467	14K 1%	2322 156 21403	-	ANT			
Q7590, 91, 92	BC847B	3198 010 42030	NTE2408	R3480	27K 1%	2322 156 22703	-	AGC			
Q7603	BC337-40	9331 796 00126	NTE199	R3481	35.7K 1% .6W	2322 156 23573	-	VT			
Q7604, 05	BC847B	3198 010 42030	NTE2408	R3482	56K 1% .6W	2322 156 25603	-	SCL			
Q7608, 09	BC847B	3198 010 42030	NTE2408	# R3486, 87	1 5% Fusible	2306 207 03108	-	+5V			
Q7823	BC337-25	3198 020 43530	NTE123AP	# R3488	4.7 5% Fusible	2306 207 03478	-	+5V			
Q7904, 08	BC847B	3198 010 42030	NTE2408	# R3490, 91, 92	1 5% Fusible	2306 207 03108	-	NC			
ZD6008	BZX79-C33	3198 010 23390	NTE5036A	# R3502	2.2M 5% 1/2W	2322 242 13225	-	SDA			
ZD6113	-	9340 386 40115	-	# R3508	22K 5% 3W	2322 195 63223	-	+33V			
ZD6402	BZX79-C33	3198 010 23390	NTE5036A	# R3510	33K 5% 3W	2322 195 63333	-	+5V			
ZD6404	BZX79-C75	9331 180 00133	NTE5046A	# R3511	1000 10% 7W Wirewound	2322 258 41102	-	NC			
ZD6464	BZX79-B6V2	9331 668 30133	-	R3514	820K 1% .6W	2322 156 28204	-	GND			
ZD6480	BZX79-C27	3198 010 22790	NTE5033A	# R3515	2.5 Cold 20% 3.6W NTC	2122 612 00023	-	IF			
ZD6510	BZX79-C20	9331 178 60133	NTE5029A	# R3518	.22 5% 3W	3198 012 32270	-				
ZD6514	BZX79-C18	3198 010 21890	NTE5027A	# R3525	47 5% Fusible	2306 204 03479	-				
ZD6601	BZX79-C3V9	3198 010 23980	-	# R3542	4.7M 5% 1/2W	2322 242 13475	-				
ZD6606	BZX79-C4V7	3198 010 24780	NTE5009A	R3571	150K 1% .6W	2322 156 21504	-				
ZD6607	BZX79-C6V8	3198 010 26880	NTE5014A	R3573	2000 1%	2322 734 62002	-				
ZD6821	-	9331 177 80133	-	R3579	1000 1%	2322 734 61002	-				
				R3607	8200 5% X 10 Network	2120 108 93916	-				
				R3608	2200 5% X 6 Network	2120 108 93913	-				
				R3609	2200 5% X 7 Network	2120 108 93915	-				
				# R3632	47 5% 3W	3198 012 34790	-				
				# RL1580	Relay	2422 132 07444	-				
				SP3100, 01	Speaker	2422 264 00343	-				
				SW1600	Switch	2422 128 02742	-				
				SW1601	Switch	2422 128 02742	-				
				SW1602	Switch	2422 128 02742	-				
				SW1603	Switch	2422 128 02742	-				
Item No.	Function/Rating	Mfr. Part No.	Notes								
C2343	.0033 10% 2kV	2020 558 90529	-								
C2448	33pF 5% 500V NPO	2020 557 90192	-								
C2463	680pF 10% 2kV	2020 558 90485	-								
C2465	.01 5% 1.6kV	2222 375 90154	-								
# C2500	.47 20% 275VAC	2222 336 29148	-								
C2502, 04, 05	.0022 10% 1kV	3198 019 52220	-								
C2507	.0015 10% 1kV	3198 019 61520	-								